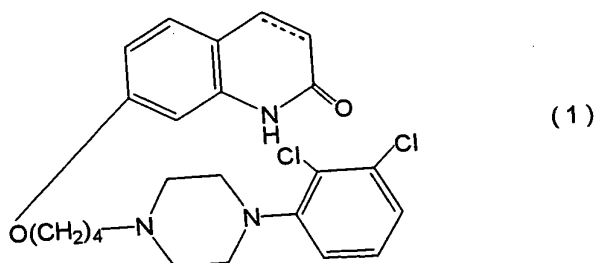


WHAT IS CLAIMED IS:

1. A method of treating a patient suffering from a disorder of the central nervous system associated with 5-HT_{1A} receptor subtype, which comprises administering to said patient a therapeutically effective amount of a carbostyryl compound of formula (1), pharmaceutically acceptable salt or solvate thereof, wherein said patient is a mammal:



wherein the carbon-carbon bond between 3- and 4-positions in the carbostyryl skeleton is a single or a double bond.

2. The method of Claim 1 wherein the disorder is depression.

3. The method of Claim 1 wherein the disorder is treatment-resistant schizophrenia, treatment-resistant schizophrenia with cognitive impairments, inveterate schizophrenia, inveterate schizophrenia with cognitive impairments, chronic schizophrenia, or chronic schizophrenia with cognitive impairments.

4. The method of Claim 3 wherein the disorder is treatment-resistant schizophrenia, inveterate schizophrenia or chronic schizophrenia, which fails to

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respond adequately to currently available antipsychotic drugs.

5. The method of Claim 3 wherein the disorder is treatment-resistant schizophrenia with cognitive impairments, inveterate schizophrenia with cognitive impairments or chronic schizophrenia with cognitive impairments, which fails to respond adequately to currently available antipsychotic drugs. 2nd

6. The method of Claim 4 wherein the currently available antipsychotic drugs are chlorpromazine, haloperidol, sulpiride, fluphenazine, perphenazine, thioridazine, pimozide, zotepine, risperidone, olanzapine, quetiapine, or amisulpride.

7. The method of Claim 5 wherein the currently available antipsychotic drugs are chlorpromazine, haloperidol, sulpiride, fluphenazine, perphenazine, thioridazine, pimozide, zotepine, risperidone, olanzapine, quetiapine, or amisulpride.

8. The method of Claim 4 wherein the currently available antipsychotic drugs are 1-3 typical antipsychotic drugs selected from chlorpromazine, haloperidol and perphenazine, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

9. The method of Claim 5 wherein the currently available antipsychotic drugs are 1-3 typical antipsychotic drugs selected from chlorpromazine, haloperidol and perphenazine, and one atypical

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antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

10. The method of Claim 4 wherein the currently available antipsychotic drugs are two typical antipsychotic drugs selected from chlorpromazine, haloperidol and perphenazine, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

11. The method of Claim 5 wherein the currently available antipsychotic drugs are two typical antipsychotic drugs selected from chlorpromazine, haloperidol and perphenazine, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

12. The method of Claim 4 wherein the currently available antipsychotic drugs are one to two typical antipsychotic drugs selected from chlorpromazine and haloperidol, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

13. The method of Claim 5 wherein the currently available antipsychotic drugs are one to two typical antipsychotic drugs selected from chlorpromazine and haloperidol, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

14. The method of Claim 4 wherein the currently available antipsychotic drugs are two typical

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antipsychotic drug selected from chlorpromazine and haloperidol, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

15. The method of Claim 5 wherein the currently available antipsychotic drugs are two typical antipsychotic drug selected from chlorpromazine and haloperidol, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

16. The method of Claim 1 wherein the disorder is autism, Down's syndrome, or attention deficit hyperactivity disorder (ADHD).

17. The method of Claim 1 wherein the disorder is a neurodegenerative disease.

18. The method of Claim 17 wherein the neurodegenerative disease is Alzheimer's disease or Parkinson's disease.

19. The method of Claim 1 wherein the disorder is panic, obsessive compulsive disorder (OCD), sleep disorders, sexual dysfunction, alcohol and drug addiction, emesis, motion sickness, obesity or migraine.

20. The method of Claim 1-19 wherein the carbostyryl compound is 7-{4-[4-(2,3-dichlorophenyl)-1-piperazinyl]butoxy}-3,4-dihydrocarbostyryl.

21. The method of claim 1 wherein the disorder is depression, such as endogenous depression, major

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not
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depression, melancholia or treatment-resistant depression; sexual dysfunction; alcohol abuse and drug addiction; cognitive impairments; neurodegenerative diseases, such as Alzheimer's disease or Parkinson's disease; autism; attention deficit hyperactivity disorder (ADHD); cognitive impairment caused by treatment-resistant schizophrenia, cognitive impairment caused by inveterate schizophrenia, or cognitive impairment caused by chronic schizophrenia.

22. The method of claim 1 wherein the disorder is depression, such as endogenous depression, major depression, melancholia or treatment-resistant depression.

23. The method of claim 1 wherein the disorder is cognitive impairment caused by treatment-resistant schizophrenia, cognitive impairment caused by inveterate schizophrenia, cognitive impairment caused by chronic schizophrenia.

24. The method of claim 23 wherein the disorder is cognitive impairment caused by treatment-resistant schizophrenia, cognitive impairment caused by inveterate schizophrenia, cognitive impairment caused by chronic schizophrenia, which fails to respond adequately to currently available antipsychotic drugs.

25. The method of claim 24 wherein the currently available antipsychotic drugs are chlorpromazine, haloperidol, sulpiride, fluphenazine, perphenazine, thioridazine, pimozide, zotepine, risperidone,

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olanzapine, quetiapine, or amisulpride.

26. The method of claim 24 wherein the currently available antipsychotic drugs are 1-3 typical antipsychotic drugs selected from chlorpromazine, haloperidol and perphenazine, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

27. The method of claim 24 wherein the currently available antipsychotic drugs are two typical antipsychotic drugs selected from chlorpromazine, haloperidol and perphenazine, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

28. The method of claim 24 wherein the currently available antipsychotic drugs are one to two typical antipsychotic drugs selected from chlorpromazine and haloperidol, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

29. The method of claim 24 wherein the currently available antipsychotic drugs are two typical antipsychotic drug selected from chlorpromazine and haloperidol, and one atypical antipsychotic drug selected from risperidone, olanzapine, quetiapine, and amisulpride.

30. The method of claim 1 wherein the disorder is cognitive impairment caused by neurodegenerative disease.

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31. The method of claim 30 wherein the cognitive impairment caused by neurodegenerative disease is Alzheimer's disease or Parkinson's disease.

32. The method of claims 21-31 wherein the carbostyryl compound is 7-{4-[4-(2,3-dichlorophenyl)-1-piperazinyl]butoxy}-3,4-dihydrocarbostyryl.

= OPA-
5 double bond 14597
"test compound"

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